

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

PLP



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,403	03/02/2004	Dieter Mauer	0275M-260DVD	2537

27572 7590 09/09/2004

HARNESSE, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

GARLAND, STEVEN R

ART UNIT PAPER NUMBER

2125

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,403

Applicant(s)

MAUER ET AL.

Examiner

Steven R Garland

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004 and 02 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☒ Certified copies of the priority documents have been received in Application No. 09/119,255.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) *
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The disclosure is objected to because of the following informalities: in paragraph 1 the status of the 09/119255 application should be updated.

Appropriate correction is required.

2. The abstract of the disclosure is objected to because the abstract should be directed to the claimed invention in this divisional. Correction is required. See MPEP § 608.01(b).

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, lines 1-2, " the real-time sensed displacement " lacks a proper antecedent basis.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article "Pierce-&-Roll riveting- the alternative to spot welding" by Edwards in view of Speller, Jr. et al. 5,829,115.

Edwards teaches pierce and roll riveting in which the self piercing rivet does not break through the lower sheet, use of a solid head, that the riveting process can be used on various types of sheets such as aluminum, and be used in various industries such as the automotive industry. Page 24, first column, and the figure. Edwards on page 24, column 2 teaches that the process must be precisely controlled so that a good joint is formed. Edwards on pages 25-26 teaches feeding a rivet to the riveter which can be mounted on a robot, that the applicator can have a C-frame, use of a punch and die, clamping the workpiece, aborting the cycle upon an error, checking plunger position to insure that it is correct when the rivet arrives, checking to insure that the plunger is at the correct position at the end of its stroke, monitoring displacement of the plunger, and use of a computer. See pages 24-26 and the figures.

Edwards however does not use an electric motor but instead uses a hydraulic applicator.

Speller, Jr. et al. teaches the use of an electric motor driven rivet applicator which converts a rotational motion into a linear motion. Speller teaches the desirability of replacing a hydraulic riveter with a quieter, faster, and more repeatable electric rivet applicator. Col. 1, lines 20-27 and col. 2, lines 36-45. Speller teaches a non hydraulic

Art Unit: 2125

riveter operated by an electric motor and also teaches that the motor can be connected through a belt and transmission if a large riveting force is required. See figure 4 and col. 5, lines 49-67. Speller further teaches that the use of an electric motor driven riveter allows close control throughout the riveting process by the use of various types of sensors including force, distance, velocity, monitoring the motor and closed loop control (real time sensing and control of linear motion). Speller further teaches that the motor can be mounted either offset or in axial alignment with the punch, clamping the workpiece, that the motion profiles can be programmed, use of computer programming, specifying a velocity for a particular motion, use of specific instructions for both instantaneous position and velocity (displacement associated with speed), and use of a C-frame. See the abstract; figures; col. 1, lines 1-57; col. 2, lines 14-45; col. 3, lines 27-60; col. 4, lines 4-60; col. 5, line 17 to col. 6, line 3; col. 6, lines 34-54; col. 7, line 34 to col. 8, line 36; col. 9, line 4 to col. 10, line 7; col. 10, line 45 on.

It would have been obvious to one of ordinary skill in the art to modify Edwards in view of Speller to use an electric motor driven rivet applicator along with its improved closed loop control system. This would provide a quieter, faster, and more repeatable pierce and roll riveter at a reduced cost.

Edwards and Speller however do not expressly teach stopping the electric motor upon an error condition. Edwards however teaches stopping the hydraulic applicator upon an error condition starting on page 25, middle column.

It would have been obvious to one of ordinary skill in the art to modify Edwards and Speller to stop the electric motor driven applicator in case of an uncorrectable error

Art Unit: 2125

or an error which outside of bounds to prevent either damage to the machine or to prevent generating defective work pieces.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven R Garland whose telephone number is 703-305-9759, after 10/13/04 at 571-272-3741. The examiner can normally be reached on Monday-Thursday from 6:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on 703-308-0538 after 10/12/04 at (571)272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SR-D

STEVEN GARLAND

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100